ON SOME POINTS IN THE TREATMENT OF EPILEPSY.[1]

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The points in the treatment of epilepsy to be here considered refer entirely to general and medical questions, and not to surgical or gynæcological operations, interesting and important as these are. It will be sufficient to say here, in reference to operative treatment, that it should always be considered in regard to each case. If there be a history of an injury, and a depression in the cranial vault alleged to be produced by the injury, or any inequality in the calvarium that might be traumatic, we should endeavour to ascertain the relations of the inequalities to the disease, as cause and effect. Sometimes the history of the case is shrouded in uncertainty, and, clinically, we cannot obtain any definite information to localise the lesion. In such cases, trephining and elevation of the depressed area should follow as a matter of routine. Even should the clinical evidence be rather contradictory, the depressed bone should be elevated all the same, for we cannot yet positively deny that a lesion of the right hemisphere of the brain may not produce epilepsy where the convulsions begin apparently in the right hand or foot.

[1] Read at the Medical Institution, Feb. 2, 1893.

Mere trephining, without opening the dura mater, is so safe and often so effectual, that it should never be neglected in any case of confirmed epilepsy where reasonable indications for its performance exist.

In what is called hystero-epilepsy, we do not stand on such firm surgical ground, either as regards the safety or, especially, the utility of the operation usually proposed. That operation should not be entertained until all other means have been tried and have failed, and the supposed connection between the function and the fits established. Even in the most likely cases no benefit may result from operation. In a very large percentage of epileptics, operative treatment is not indicated with sufficient clearness to be entertained. The treatment is medical and general, and it is to this that we will now direct your attention.

In the first place, the mind of the patient must be placed in such a state of repose and content that relief is likely to occur.

It is of no use trying to cure a discontented, depressed epileptic, who is continually brooding over his infirmity, and the miserable prospect before him in consequence. It is just as useless to treat epileptics who are under the care of too excitable, nervous guardians, whose conditions of unrest and of alarm are insensibly communicated to the patient, and an uneasy feeling engendered in his mind that something dreadful is wrong, or about to happen, even when the patient does not know that he is epileptic. "Stop the fits!" is the cry of disturbed households and of frightened patients; and authorities, quacks, and "Will-o'-the-wisps" are followed until hope is lost, and then recovery is most likely to occur because a rational course is most likely to be followed. We always try to impress upon the patient, if he is a sensible person, and upon the friends of the patient, in all cases, that to stop the fits is not the primary object of treatment, but the ultimate object; and that in all chronic cases, and indeed in all cases, it is best to make arrangements for the occurrence of fits for months, or even years. A gradual diminution in number or severity can, in most cases, only be expected, and during this period of treatment we have to see that the least

possible inconvenience is produced by their presence. The disease must not be allowed to spoil the lives of patients and friends more than can be helped, and the healthy hours must be rescued, if possible, from the nightmare of dread that usually more or less overshadows them even in very young patients. The state of excitement, of alarm, and sometimes of panic that ensues in a family when a fit occurs amongst its members should be avoided, and family life should follow a normal course. In many households no amount of familiarity with the disease will permit the members to witness an attack without such a disturbance as will be remembered for days. Then and afterwards the composure is assumed, unnatural, and only on the surface, and all the members are furtively watching the sufferer, and starting at the slightest indication of a fresh attack. In such households removal of the patient from home is the only way to remove the difficulties.

On the other hand, complete indifference on the part of relatives is a still greater barrier to treatment. The patient here is looked upon as a nuisance, feels himself "left out in the cold," or a burden to friends, who bear the burden not willingly, silently, or meekly. Here we have no influence capable of being guided into useful channels, and the patient should leave home; but the difficulty is to have the patient maintained away from home. Many other instances suggest themselves of patients living under conditions that prevent the full amount of good being done, and it is often entire waste of time and credit to undertake a case under such conditions.

Suppose that the circumstances are favourable to our rearrangement of them, and that we are likely to have a reasonably free hand in the management of our patients, what points should first claim our attention?

We must first deal with the patient. If he is fairly rational, we have some explanations to make. If he does not know that he takes fits, we must explain to him why he has not the same privileges as other members of the family, calling his illness or weakness by whatever euphemistic name we like. Unless we can give a sensible reason for this necessary restraint, the

patient will see nothing but injustice and partiality in our arrangements; and we, who know all the facts, cannot realise the soreness produced in the mind of the sufferer because he does not realise what he suffers from. When the patient is aware of the disease, even then he has only a faint idea of his infirmity; but we can use the right term, and must not deceive him regarding his prospects. Confidence can only repose safely on a basis of truth, and we cannot relieve our patient in the best possible way if the patient is led to think our promises are only made to soothe or please him. The way of relief may be long, tedious, and disappointing, with turnings that seem to lead in the opposite direction. These circumstances we must prepare the patient for, so that courage and hope may be preserved. There is no disease in which the frank friendship of the medical man can do so much as in epilepsy—as much, if not more, sometimes than direct medical treatment.

Having secured their confidence and taught them to realise their true position, we have next to consider what freedom epileptics can have, either as children or as adults. Speaking generally, both classes should be allowed to live in much the same way as other people, provided that *undue* excitement is avoided. Children should be educated physically, mentally, and morally, anything like over-pressure being avoided, and by the very best and most judicious teachers. It is only by securing a satisfactory development of all the faculties of the epileptic child that we can hope to render stable the supposed abnormal instability of the nervous system. Except in very mild cases of the disease, education cannot be carried on at the ordinary schools, and will probably in future be provided in special schools. This point we need not follow up further here. In regard to the danger of allowing these children to play at games that might possibly be dangerous, our conviction is that epileptics rarely have fits when all their faculties are on the alert. It is during sleep, or just when the patient is getting out of bed or when dressing himself—that is, before he is quite wide awake—that fits most frequently take place. They often occur also when sitting at or leaning over the fire, or at meals, in

church, or *after* excitement. Gastric, intestinal, menstrual, or other irritants may excite an attack at any time; but fits seem mostly to occur when the patient has relaxed control over the system, and not when he is on the *qui vive*.

For instance, one patient has traversed a fearful flight of stone steps several times a day for over fifteen years, and where a fit would probably mean destruction. He has had many fits during that period, but never any there. Another epileptic has hunted all his life, but never had an attack in the saddle. During the last frost several epileptics and their friends consulted us as to the advisability of skating, one party wishing to skate, and the other horrified at the idea. We were in favour of skating under certain conditions. Epileptics can pursue nearly all occupations and recreations if it is done in moderation and with all reasonable precautions. In all circumstances, especially in sitting before the fire and doing nothing, epileptics are liable to risks that non-epileptics are not liable to; but if any good is to be done, and the lives of the patients are to be rendered tolerable, we *must run some risks*, and these we have shown are not so great during occupation or recreation as most people suppose them to be. The chief safeguard is companionship, which should, if possible, be companionship in the ordinary sense of the term, not the position of a keeper, nurse, slave, or tyrant, categories into which the companions of epileptics generally fall. The most dangerous position for an epileptic is to be alone, no matter where he is. With a companion he is comparatively safe, under ordinary circumstances, and may be allowed to do pretty much as other people.

In expressing our opinions on the necessity of allowing greater freedom to their children, we have to point out to timid mothers the result of the opposite method of treatment. Imbecility or lunacy in many cases sets in, we believe, from the checks the patient receives at every point, and from the consequent disuse of the faculties nature has provided him with. With education and recreation the life of the epileptic child is fully occupied. The question of occupation meets us when the patient approaches adult life. Of course we find epileptics in

all positions of life, but these positions have generally been attained before the disease showed itself. When the epileptic approaches adolescence, the question of earning a livelihood becomes a very serious one. Until lately nothing was open to him; and, even if a trade or occupation had been acquired before the fit came on, the exercise of it was either at once or gradually closed to him. This arose from the aversion or distinct refusal of ordinary people to work with such a companion on account of the horror they have of witnessing a fit, or on account of the generally lessened value of the labour of the epileptic.

Here we have slowly come to the conclusion that in future *epileptic labour must be protected.* By this we mean that it must be carried on in special homes and workshops, where the patients can be taken care of at work, their efforts directed into the most useful channels, and, where the disease incapacitates from sufficient work to enable the patient to earn a livelihood, friends or charity must provide the difference.

A career is thus opened to epileptics, care is taken of them in every way, and they cease to be tossed about from pillar to post, and from specialist to quack, as they too often are.

Our Home at Maghull is the forerunner of the movement in England, and it has far exceeded in usefulness the expectations of its founders. It has been followed up by an ambitious and likely to be successful scheme, in the establishment of the National Association for the Employment of Epileptics, near London, and also by the formation of Lady Meath's Home of Comfort, near Godalming. But the fringe of the question has only yet been reached, and in the near future the poor epileptics will be much better dealt with than they have been in the past.

Amongst the better-class patients occupation and companionship can both be procured; and here it does not matter if the occupation be remunerative or not. Hence very little sustained attempt is often made to make such patients use their brains. This is to be deplored, because the systematic use of the brain is of more value than the swallowing of drugs.

Out-door employment is the best. The farm, the garden,

and mechanical pursuits, where the lungs and muscles are kept in play, are generally preferred; but we must be governed by the idiosyncrasies and predilections of each case. When we have so managed that an epileptic is happy at and thoroughly interested in his work, we have accomplished an important part of the treatment.

The food of an epileptic must be simple and unstimulating. Sometimes a purely milk diet is useful, but as a general rule a light mixed diet, with early meals regularly served, answers best. Children require to be specially watched in regard to diet. It should be generous and good, but pastry, sweets, unripe fruits, and other materials that children delight in must be strictly avoided. Hours of sleep should be ample, but not excessive; and the habit that epileptics acquire of irregularity and over-indulgence in this respect should be prevented. They should always retire to bed early.

There is no special virtue in cold baths, shower baths, brine baths, massage, and many other fads, beyond the beneficial cleansing and tonic influence that these means produce in all individuals, and their use must be regulated by that common-sense that governs their usefulness amongst all rational people.

Smoking is, I believe, always injurious, and should be given up where it has become a habit.

The medicinal treatment of epilepsy is a wide subject, and cannot be dealt with at the end of a paper like this; we will only deal with one or two phases of it.

At the present time it resolves itself into the administration of bromide of potassium, varied by the occasional addition or substitution of bromides of sodium, ammonium, or strontium. We have in bromides a powerful means of controlling this disease, but the question of cure by their aid is entirely unsettled and exceedingly doubtful. In 99 cases out of 100 a medical man called to a case of epilepsy will prescribe bromide of potassium, and the prescriptions of specialists who have been consulted by an epileptic all contain bromides. In our own experience, we have no hesitation in saying that this universal treatment by bromides is often disastrous.

Here is the substance of a letter from a very intelligent mother, who reported to us her experience of the treatment of her son, and which illustrates the present practice from a lay point of view.

She says, "At about the age of nine years our son developed occasional slight spells of petit mal. We consulted Dr ——, who pronounced him epileptic. He had not then had any actual fits. Bromide of sodium, 10 grs. three times a day, prescribed. His first seizure occurred when he was ten years and a few months old. Seizures at first came at intervals of months, then weeks, one at a time.

"At twelve years old saw Dr ——, who prescribed bromide of ammonia, with no good result. Has seen many doctors, including Dr —— again, who all rang the changes on bromides of various kinds with monotonous persistency, until the poor boy became a physical and mental wreck. His tongue seemed paralysed, he could with difficulty articulate, and sat in a dazed condition, taking interest in nothing. During his fits, even during the attacks of petit mal, he was unable to retain his urine. He was a pitiable sight, and had become reduced to this condition by bromide, as I shall prove.

"In February last, when taking about 60 or 70 grains of bromide of soda each day, as he had been doing for years, he had 34 fits; 10 one night, 4 another, and so on. In despair, I left off giving him the useless stuff. Some one casually spoke to me of borax as an alleviator, and on the 5th of March I began giving him 20 grains powdered borax three times a day. In March he had 18 fits, in April 2. In May I had reduced the dose, and he had 5. In June, having resumed the full dose, none at all. In July, on the 30th, one slight fit, nine weeks having elapsed since the last. In August none, but he began developing a kind of eczema. I gave up the borax on that account on the 11th of September; and although I have resumed giving it again, it seems somehow to have, to some extent, lost its virtue. In September he had 4 fits, and so far in October 8. His fits at present occur on awakening in the morning, and are preceded by a prolonged attack of petit mal,

with occasional cries and jerks. However, although the borax is failing a little in its effects, *he is like a different person—bright, active*, and *energetic*. He reads, writes, plays on the piano, and takes an interest in all that goes on. His mind has been checked and is undeveloped, like a child's mind, and I am afraid the bromide has mentally maimed him for life."

This letter describes in a mother's eloquent language our impression of the perniciousness of the treatment of chronic and confirmed epilepsy by large and increasing or constantly repeated doses of bromides. We would go further, and deny that bromides, thus given, produce an arrest of the attacks, of sufficient extent, and in a large enough number of cases, to counteract their baleful effects on the brains of many patients.

We have now met with many patients where the fits have been arrested, and in a considerable number permanently arrested so far, under various methods of treatment; but we do not remember any cases where large doses of bromide constituted the treatment. We may arrest the fits by bromides, as we have already said, for a time, but it is generally at the expense of the patient's brain: a few take the drug kindly, and the benefit seems unmixed, but these cases are very few.

We could detain this meeting all night with cases culled from our experience at Maghull, where patients have come there after years of treatment with bromides, one, two, or even more drachms a day, miserable, pustule-marked, introspectively inclined creatures (that is, if they have got any acting, unbromimised brains left), with feelings and fads and nervous symptoms, minds and bodies blighted or apparently wrecked.

A few months of rational treatment will probably not make much difference in the number of attacks, which burst out again as soon as the bromide is stopped, but the patients soon appear like different beings, can think rationally, and of something else but themselves, and it becomes a pleasure instead of a pain to converse with them, and to study their welfare.

Attacks of epilepsy temporarily stupefy the patient and upset the mental faculties, but this effect is quite different and

generally of a less serious nature than the deterioration produced by bromide. For these reasons, we rarely give greater doses of bromide than five grains, three times a day. Larger doses are very rarely required except as a sort of medicinal police, and, like the police, are only required when a case becomes refractory, to be dispensed with when the patient becomes amenable to ordinary treatment.

In the letter from the lady referred to above, reference was made to the use of borax in the treatment of epilepsy. We have used it pretty extensively for several years, as it seems a comparatively harmless drug, and we will conclude this paper with a description of the results of our employment of it.

Borax alone has much disappointed us, although we know of several cases in which it has acted as a charm; but we are inclined to believe that it acts best when given after the use of bromide, or especially in conjunction with small doses of bromide.

Statistics of the results of the treatment of epilepsy are never final except they cover many years, and when the comparison of the effect of using different drugs is made under conditions that are somewhat similar. It is very hard to obtain conditions that are similar, but at Maghull we have the best approximation to similar conditions that has hitherto been obtained in this country.

We need not trouble you with a table showing the effect of giving borax alone at Maghull, because it failed in all the cases in producing any decided benefit.

Mixed with small doses of bromide of potassium it had a better effect, but with bromide of sodium the result seemed to be still better, and for some time we have used the following prescription in a considerable number of cases:—

℞—Sodæ Biborat	. .	gr. 200
Sodii Bromid	. .	gr. 50
Sy. Simplic	. . .	℥i
Aq. ad.	. . .	℥x

℥i t.—d. ex aq. p. cib.

Sometimes, but rarely, a fourth dose is given. The following statistics have been prepared by me of the effects of this prescription on patients who have been treated with it for a sufficient time to allow of an impression being made.

The previous treatment was very varied, and it would be too tedious to present it all before you. It included all kinds of bromide treatment, regular and irregular; also indifferent treatment, where the general health only was attended to; and finally, cases where other reported specifics, such as zinc, antipyrin, simulo, &c., were given.

A study of the table will show that the fits have been arrested for several months in 9 cases; in 17 they have diminished in frequency, in many of these the diminution being marked, in one the attacks have remained stationary, and in one they have increased under treatment. An examination of the reports of a considerable number of private patients who have been under this treatment for some years past only corroborate the experience of the Home at Maghull. The notes and observations are, however, not so complete as in those treated at the latter place, and it would not alter the conclusions were they also tabulated.

Although this method of treatment has a good influence on the attacks, its beneficial effect on the mental condition of the patients is much more uniform. A great many of the patients showed symptoms of post-epileptic or periodical mental disturbance. Several of them were stupid and dull for several days, and a few were bedridden and helpless at times, and required then to be treated as imbeciles. These mental disturbances have almost disappeared, and the patients have been saved the necessity of confinement in lunatic asylums. In fact, in several instances the secretary had warned the friends that removal from the Home would probably be necessary on account of the mental disturbances frequently evinced after admission. Owing to the great improvement in their mental state under treatment, we have never required the notice to be carried out.

If my report of this method of treatment had not some drawbacks, it might be considered too favourable. Fortunately, for

Table showing the Effects of Borax and Bromide of Sodium Treatment in Epilepsy.

Sex.	Age.	Previous Duration of Disease.	Variety of Disease.	Effect of Previous Treatment as far as known, and its Duration.	Effects of Borax and Bromide of Sodium Treatment, and its Duration.	Remarks.
		Years.				
M.	18	8	Grand mal.	9 attacks per mth. for 5 mths. ; milk diet.	$2\frac{2}{3}$ attaeks per mth. for 3 mths. ; mixed diet.	Happy and contented.
M.	30	12	,,	11 ,, ,, 3 mths. ; no medicine.	6 ,, ,, 2 mths.	Mind much improved.
M.	23	23	,,	$10\frac{1}{4}$ per mth. ; under bromides for 27 mths.	$3\frac{1}{6}$ per mth. for 12 mths. ; only 2 attacks last 6 mths.	,, ,,
M.	18	8	Mixed.	17 per mth. p. mal and $6\frac{2}{3}$ per mth. g. mal for 23 mths.	$1\frac{2}{9}$ p. mal and $1\frac{2}{9}$ g. mal per mth. for 9 mths. ; none for 3 mths.	,, ,,
M.	29	29	,,	$5\frac{1}{3}$ per mth. p. mal, $8\frac{1}{4}$ g. mal for 14 mths.	$1\frac{5}{8}$ p. mal and $8\frac{1}{12}$ g. mal per mth. for 24 mths.	,, ,,
M.	18	10	,,	29 per mth. p. mal, $12\frac{3}{5}$ g. mal for 15 mths.	3 p. mal and 2 g. mal per mth. for 15 mths. ; none for 9 mths.	Much improved every way.
M.	17	12	,,	$18\frac{9}{13}$ p. mal and $3\frac{7}{13}$ g. mal per mth. for 13 mths.	$18\frac{9}{14}$ p. mal and $2\frac{1}{2}$ g. mal per mth. for 14 mths.	Feels very well.
M.	24	14	,,	$3\frac{8}{16}$ p. mal and $31\frac{7}{8}$ g. mal per mth. for 16 mths.	$8\frac{1}{2}$ p. mal and $5\frac{1}{2}$ g. mal per mth. for 8 mths.	Temper improved.
M.	14	14	Grand mal.	$3\frac{5}{16}$ per mth. for 16 mths.	$\frac{1}{5}$ per mth. for 9 mths. ; no attacks last 6 mths.	Discharged well.
M.	16	9	,,	30 per mth. for 2 mths.	$\frac{18}{19}$ p. mal per mth. and 9 g. mal for 21 months.	... ...
M.	16	10	Mixed.	$\frac{1}{4}$ p. mal, 14 g. mal per mth. for 4 mths.	$\frac{14}{16}$ p. mal and 8 g. mal per mth. for 15 mths.	Temper much better.
M.	14	5	Grand mal.	45 per mth. for 2 mths.	4, 2 p. mal and 7 g. mal per mth. for 10 mths.	A quite different lad.
M.	36	10	,,	6 per mth. for 2 mths.	8 per mth. for 8 mths.	Increase.
M.	19	6	,,	15 per mth. reported average before admission.	4 per mth. for 6 mths.	Happy and contented.
F.	34	28	Mixed.	$1\frac{2}{3}$ p. mal per mth. and $2\frac{22}{27}$ g. mal for 27 mths.	$1\frac{1}{4}$ p. mal and $2\frac{5}{8}$ g. mal per mth. for 16 mths.	Mind composed.
F.	22	13	Grand mal.	6 per mth. for 4 mths.	$1\frac{1}{5}$ per mth. for 9 mths.	A good worker.
F.	38	26	,,	3–4 per mth. reported number.	$1\frac{11}{13}$ per mth. for 13 mths.	Partial loss of hair.
F.	31	15	,,	$2\frac{2}{3}$ per mth. for 3 mths.	$\frac{4}{5}$ per mth. for 6 mths. ; 1 during last 3 mths.	Improved mentally very much.
F.	30	15	,,	3 per mth. for 2 mths.	$1\frac{2}{3}$ per mth. for 9 mths.	Mind clear.
M.	18	3	,,	3 per mth. for 12 mths.	$1\frac{5}{6}$ per mth. for 6 mths.	,,
M.	15	13	,,	$20\frac{2}{3}$ per mth. for 3 mths.	$8\frac{2}{3}$ per mth. for 3 mths.	Quiet boy.
M.	27	11	,,	Average 3 per mth.	No attacks for 4 mths.	Mind clear.
M.	37	22	Mixed.	Average 10 per mth. before treatment.	No attacks for 5 mths.	,,
M.	41	4	Grand mal.	,, 10 ,, ,,	4 per mth. for 4 mths. ; none for 2 mths.	,,
M.	17	9	,,	Had 74 the mth. before admission.	$\frac{1}{4}$ per mth. for 4 mths. ; none for 3 mths.	,,
M.	19	11	,,	Had 4 per mth. before admission.	4 per mth. for 4 mths.	Excitable.

our credit, there are some objections to it, but these are entirely physical.

1*st.* The full dose sometimes produces gastric troubles, flatulence, indigestion, gastrodynia, and loss of appetite. The drugs may be either lessened in quantity or stopped for a time, and the medicine should always be given after meals, and well diluted. After a little caution in gradually increasing the dose, combined with careful dieting, the patients become inured to the medicine, and can take it without any effort or apparent immediate after-consequences.

2*nd.* An erythema of the skin, that in some cases approaches an eczema, is frequently observed after the medicines have been taken for a time: this is sometimes very severe, and productive of much itching and irritation; in some cases it is intolerable, and the drugs may have to be stopped for a time, when it immediately subsides. In most cases we encourage the patient to persevere with the medicine, knowing that the skin disease gradually subsides, and that the cases that persevere are those most benefited, as a general rule. In this there are, however, some marked exceptions.

Daily immersion in alkaline baths relieves the symptoms very much, and the inunction with vaseline or other simple lubricant is most useful when the medicine is left off for a short time until the eczema subsides: its resumption is not generally followed by the reappearance of the skin disease, or if it does appear, its severity is much reduced.

3*rd.* Loss of hair is a more striking, more unexpected, and fortunately much rarer phenomenon. It is sometimes quite complete, as is shown in the photographs printed below, where the hair disappeared from every part of the body after a short administration of the medicine. We are not sure of the length of time after the commencement of the medicine that the hair began to drop off.

He was first seen by us in the middle of March 1892, and had suffered from fits since 1867. He then commenced taking the medicine, and on the 2nd of September he was quite bald. His attacks have been so much relieved that he was willing to

continue the mixture on our explanation of the cause of the alopecia; on November 30 the hair had reappeared on the eyebrows and slightly on the moustache, and now in February you see he has now a fair moustache, but somewhat greyer than formerly. The eyebrows are distinctly clothed, and tufts are appearing scattered over the head. We had not seen this

patient for six weeks before the time when the alopecia was at its height, but we can say that six weeks before, we did not notice anything remarkable. The second photograph shows his condition before taking borax. Another photograph, taken June 1893, shows that the hair has returned over two-thirds of his head.

A recent arrival at Maghull wears a wig. The loss of hair followed the administration of borax alone two years ago. The alopecia was not associated with the medicine in the mind of the patient, and hence the latter has been continued ever since. In his case the alopecia was at one time quite complete everywhere; now the moustache, eyebrows, and patches over his

head are appearing in nearly the same order as in the previous case.

A lady patient, who has taken the borax alone in small doses of 10 grs. for fifteen months with much benefit, has nearly lost

her hair, except a fringe around the margin of the scalp. This fringe she had so utilised that we did not notice the alopecia till it was far advanced. When we spoke to her about it she and her friends were considering the advisability of consulting a specialist on the subject, but we assured them we were specialists-extraordinary on this form of alopecia, and explained the cause and cure to their satisfaction. The medicine is being continued, and the hair has grown again considerably.

A boy was brought to me in a deplorable-looking state after dosing with borax for several months; his head was covered with bald patches, and his body with erythema. He looked thin and wretched. The stoppage of the medicine gave relief; and when I next saw him, his hair was again luxuriant, and his appearance normal. He has now been taking the medicine for some time without any of the cutaneous troubles, but without the same remarkable efficacy on the disease that it formerly had.

Many other localised alopecias have been noticed, but these four represent all the cases of marked general alopecia. It is only within the last six months that the phenomena has been observed and its pathology recognised, and further attention is required to clear up several questions.

Loss of weight sometimes follows the use of borax, and this can be corrected by the use of cod-liver oil, milk, or other articles of diet.